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OUR PLANET
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CONNECTED DREAMS
Globalization and the Environment

OUR PLANET

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* All dollar ($) amounts refer to US dollars.

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reflections

by Achim Steiner, UN Under-Secretary-General and Executive Director of the UN Environment Programme

The very word globalization triggers often highly polarized views. For some it is an apocalyptic demon devouring the environment, homogenizing cultures and values and subverting equity, justice and common decency. For others it is the ultimate evolution of the market, freeing multinational corporations from government red tape and promising previously unimaginable economic development which could overcome poverty and scythe through what are seen as outdated, suffocating values.

In reality, it is neither and both — a force which can be steered in either direction and hopefully one that is deemed sensible and intelligent for people and the planet. We are missing the chance to do this amid the heated arguments, but UNEP aims to seize the moment in areas affecting its mandate and vision.

UNEP's annual Governing Council/Global Ministerial Environment Forum meetings provide an opportunity to raise the level of debate, and point towards the sustainable globalization we so urgently need. We need it because even before globalization became common parlance the Earth's ecosystem services, upon which all life depends, were declining. We need it because, at present, globalization is failing to capture the true value of nature-based goods and services. We need it because those benefiting from globalization may well do so at the expense of those unable to take part in its essentially short-term, market-led approach. And we need it because the gap between rich and poor is widening, with no evidence that wealth is 'trickling down'.

UNEP does not presume to be the first organization to organize a globalization debate. But we do perceive that a new understanding is emerging that the international community must address, fair and square, how it relates to environmental sustainability. Some pioneering corporations — including ones that depend on fisheries — are beginning to question whether the existing model is a good long term investment, whether the natural or nature-based resources upon which their profits are predicated will remain over the coming decades.

In 2001 the World Trade Organization launched the Doha Round with linkages between trade and environment; though stalled, it has firmly underlined that the globalization of trade needs managing to ensure environmental and human well being.

Sustainably managing globalization can include many measures, from extending certification of timber and other natural resources to adopting green procurement policies. Innovative market mechanisms that start recognizing the true value of the Earth's assets are also urgently needed.

UNEP recently hosted the meeting of the parties to the Basel Convention on hazardous wastes. Globalization is triggering a massive rise in electronic wastes, some of which are being dumped in Asia and Africa: one investigation indicates that at least 100,000 computers arrive at the port of Lagos alone each month. Up to three quarters of the imports — which also includes old televisions and mobile phones — will end up in an African rubbish tip or open air incinerator.

Like any market, the global marketplace is both an economic and a social construct. Intelligent globalization implies willingness to incorporate such fundamental values as fairness and equity - and knowledge about how our planet can best sustain the production and consumption patterns of now close to 7 billion people. Environmental sustainability and social equity have emerged as key determinants of whether globalization is a viable economic development path for the 21st century. How we manage the opportunities and risks associated with it is ultimately for everyone to chose - not for some to dictate.

Johnny Clegg, the South African rock star and anti-apartheid campaigner, has chosen — and become a computer recycling businessman. Learning that his old PC was likely to end up polluting land or water, he established a company to recycle electronic waste. He has already opened a plant near Johannesburg and aims to set up an ultra-modern, high-tech factory near Cape Town recycling United States and European e-waste, and providing work for 17,000 township people. He is demonstrating that globalization is what we want it to be — a threat, or a new way of doing businesses that brings an intelligent and creative approach to conserving finite natural resources, and to benefiting the planet and its people.

UNEP promotes environmentally sound practices globally and in its own activities. This magazine is printed on 100% recycled paper, using vegetable -based inks and other eco-friendly practices. Our distribution policy aims to reduce UNEP's carbon footprint.

Cover photo © ChinaFotoPress/Getty Images. Plastic recycled slippers float on water as part of an environmentally themed art show created for World Environment Day, 5 June, 2006, in Nanjing, Jiangsu Province, China. Looking afresh at our consumption and production patterns, and redefining our attitudes to waste and a product's lifecycle, are components of a broader discussion of the environmental implications of globalization.

verbatim

"Once cut, a Tesso tree begins a long journey. Indonesians log and pulp it, but a Finnish company turns it into paper in China. German and Japanese companies then distribute the paper to office suppliers in Europe and the US."

WWF-US President Kathryn Fuller, speaking at the Brown University/Providence Journal's PAX Americana Conference (2003)

"To become a responsible consumer is not simply to purchase on the basis of the price or the specific charateristics of a product, but to make one's purchase by using human and environmental criteria."

Association Max Havelaar on their website at www.maxhavelaarfrance.org/

"In a country like Kenya, we produce the best coffee and the best tea in the world. And we push our land so much in order to produce more and more coffee, so that we can make more money in the market to service those debts and of course meet some of the basic needs, and so those crops are the main reason for the destruction of the environment."

Wangari Maathai, interviewed by TransAfrica Forum on development, the environment and globalization (2006)

"Globalization has two faces, one potentially very destructive, but another that presents a historic opportunity for societies like ours."

Michelle Bachelet, President of Chile speaking to Al Jazeera Television (2006)

"You don't help the world's poor by dressing up in a turtle outfit and throwing a stone through a McDonald's window. You help them by getting them the tools and institutions to helps themselves."

Thomas L. Friedman, in *The World is Flat, A Brief History of the Twenty-First Century (2005)*

"Poverty resulting from the declining fish stocks is the major reason why young people are prepared to risk drowning in the Atlantic Ocean to reach Europe."

Yayi Bayam Diouf, Senegalese anti-migration campaigner who lost his son to drowning (2006)

"Unscrupulous dealers are also globalized."

Pierre Portas, Deputy Executive Secretary of the Basel Convention Secretariat, commenting on the illegal toxic waste dumping in Côte d'Ivoire (2006)

numbers

5
Percentage decline of carbon storage capacity of the world's forests since 2000 – *Worldwatch Institute*

60
The percentage of the world's ecosystems that are in decline or degraded to an extent that we can no longer rely on their services – *Millennium Ecosystem Assessment*

80
The percentage of electronic waste produced in the United States shipped overseas for disposal – *Silicon Valley Toxics Coalition*

300,000,000
The number of people living in China's arid west who depend on water from glaciers for their survival—7 per cent of China's glaciers are lost to melting each year – *Chinese Academy of Sciences*

70
The percentage of the world's marine fisheries that are now fished up to or beyond their sustainable limit – *UN Food and Agricultural Organization*

100,000,000
The number of cell phones discarded in Europe every year—only 2 per cent are recycled – *UNEP Vital Waste Graphics*

16,000
The number of plastic bags distributed every second – *UNEP Vital Waste Graphics*

60,000,000
The amount in US dollars that African countries spend each year to control alien invasive water weeds, such as water hyacinth and water lettuce – *Convention on Biological Diversity*

36,600,000
Net loss in hectares of forested areas worldwide between 2000 and 2005—an area bigger than Germany and nearly the size of Japan – *UN Food and Agricultural Organization*

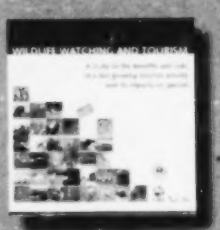
2065
Latest estimated date for full recovery of the ozone layer – *Ozone Secretariat*

books

GEO Yearbook 2007

The UNEP GEO Yearbook for 2007 features a section on Environment and Globalization. It examines risks posed by globalization for ecosystem services as well as opportunities to harness globalization trends to benefit ecosystems, support economic development, and advance human wellbeing.

Wildlife Watching and Tourism



In this 2006 report, the UNEP-administered Convention on Migratory Species (CMS) studies the benefits and risks of the growth of tourism around the world, especially its impacts on biological diversity.

Labour and the Environment: A Natural Synergy

Published by UNEP, the International Labour Organization, the World Health Organization, and trade unions, Labour and the Environment: A Natural Synergy explains the role that workers and their representatives can play in the implementation of sustainable development, illustrated by a number of case studies.

UNEP 2006 Annual Report

The UNEP 2006 Annual Report looks at the organization's work and achievements during the year.

www.unep.org/publications

Defending the Environment: Civil Society Strategies to Enforce International Environment Law

Linda A. Malone, Scott Pasternack (Island Press, 2006)

Defending the Environment provides strategies and detailed information for nongovernmental organizations, community groups and individuals to bring environmental and public health problems to the attention of international courts, tribunals and commissions, or to their domestic counterparts. This revised and updated edition also contains new case studies of the application of those strategies in recent years.

Konsum. Globalisierung. Umwelt (Consumption, Globalization, Environment)

Edited by Marc Engelhardt and Markus Steigenberger (2005)

This collection of essays and articles appeared after the McPlanet.com Conference, jointly organized by Attac, BUND and Greenpeace in cooperation with the Heinrich Böll Foundation and the UNEP collaborating centre, the Wuppertal Institute for Climate, Environment and Energy. Authors such as Martin Khor, Sunita Narain and Wolfgang Sachs argue that the "global consumer class" — the 20 per cent of rich global citizens that use up 80 per cent of the world's resources — can steer politicians and industry in the right direction.

80 hommes pour changer le monde (80 men to change the world)

Sylvain Darnil, Mathieu Le Roux (J.C. Lattes,2005)

Imagine a world where… a bank helps all its clients escape from extreme poverty while still turning a profit… farmers do not use chemicals and yet increase their yields… packaging is biodegradable and nourishes the Earth instead of polluting it. This world exists, and this book illustrates it. The authors take us on a world tour of sustainable initiatives and positive businesses, proving that being a lucrative entrepreneur can also contribute to positive social and environmental impact. The story of 80 men and women, around the world, in all sorts of places, is an inspiring collection of innovative actions.

Voyage aux pays du coton : Petit précis de mondialisation (Journey to the Lands of Cotton. A Brief Manual of Globalization)

Erik Orsenna (Fayard, 2006)

In an attempt to illustrate and understand the past and present effects of globalization, Erik Orsenna takes us on a journey to the four corners of the world following the thread of the cotton trade. He visits plantations in Mali and the United States, research laboratories and huge cotton farms in Brazil, museums in Egypt, the dried out Aral Sea and the steppes of Uzbekistan, textile factories in China and France. These are all places of encounter with the raw material which has marked the history of entire countries and which to this day hundreds of millions of people still depend upon.

Paradigm Wars: Indigenous Peoples' Resistance to Globalization

New 2nd edition (Sierra Club Books, 2006)

No community is more directly affected by economic globalization than the world's 350 million indigenous peoples, yet their voices have been largely excluded from the globalization debate. With many of the planet's remaining natural resources on indigenous lands, traditional indigenous practices of biodiversity preservation have, ironically, made these lands targets for global corporations seeking the last forests, genetic and plant materials, oil, and minerals. *Paradigm Wars: Indigenous Peoples' Resistance to Globalization* contains 28 articles on every phase of the global struggle for indigenous rights, and the stories of resistance.

Worldchanging: A User's Guide for the 21st Century

Edited by Alex Steffen (Harry N. Abrams, 2006)

Coordinated by the co-founder of the award-winning website Worldchanging.com, this publication contains information, resources, reviews, and ideas from leading thinkers who believe that the means for building a better future lie all around us. Giving readers the tools they need to make a difference, each chapter offers new answers to key questions, such as: "Why does buying locally produced food make sense?" "What steps can I take to influence my workplace toward sustainability?" "How do I volunteer, advocate, and give more effectively?"

The Travels of a T-Shirt in the Global Economy: An Economist Examines the Markets, Power and Politics of World Trade

Pietra Rivoli (John Wiley & Sons, 2005)

From a Texas cotton field to a Chinese factory, and from trade negotiations in Washington to a used clothing market in Africa, Pietra Rivoli uses her t-shirt to illustrate crucial lessons in the globalization debate and to demonstrate the impact of markets and politics on both rich and poor countries.

people

MARK MALLOCH BROWN has been named a visiting fellow at the Yale Centre for the Study of Globalization. A national of the United Kingdom, Mr. Malloch Brown had served as U.N. Deputy Secretary-General to outgoing Secretary-General Kofi Annan. While at the

Centre, Mr. Malloch Brown plans to focus on writing a book on changing leadership in a globalized world. Corporate and political leaders are struggling with problems that cross borders, he said, citing concerns about AIDS, climate change and terrorist organizations. "The modern security threat is not your neighbour's army any more," he said. "I think it calls for a whole new set of leadership traits and approaches to problem solving."

SYLVIE LEMMET, a national of France, has been appointed Director of the UNEP Division of Technology, Industry and Economics (DTIE), based in

Paris. Ms. Lemmet holds Master's Degrees in Public Administration from Harvard University and from the Ecole Nationale d'Administration. She brings to UNEP a wealth of managerial and technical expertise, spanning many years working with the private sector, NGOs, and with international organizations, including Medecins Sans Frotnieres and The World Bank. More recently, she was Senior Auditor with the French Cour des Comptes, where she played an active role in the reform process of the public sector in France and participated as a member of Cour de Comptes' audit team of the UN.

PETER GILRUTH has been appointed Director, Division of Early Warning and Assessment (DEWA). Mr. Gilruth, an American national, holds a Master's Degree in Environmental Management and a PhD in Forestry and Forest Product Techniques. He brings to UNEP more than 20 years experience as an environmental scientist, project manager and strategist with the US Government, academia, the UN Development Programme (UNDP) and, currently, the private sector. As a scientist, Mr. Gilruth has gained international

recognition and respect, particularly in the field of environmental assessment. His career has been characterized by successes in applying environmental science, assessment and information to promoting and developing environmental policies at all level.

IBRAHIM THIAW has been appointed Director, Division of Environmental Policy Implementation (DEPI). Mr. Thiaw, a national of Mauritania, holds an advanced university degree in Forestry and Forest Product Techniques, and brings to UNEP more than 22 years of expertise in the fields of natural resource management and environmental policy. Since his early career with the Ministry of Rural Development of Mauritania, Mr. Thiaw has successfully developed and implemented large-scale environmental programmes and projects in Africa and globally. As IUCN Regional Director for West Africa, and most

recently as Acting Director-General of IUCN, Mr. Thiaw has been instrumental in shaping the future of environmental conservation.

JANOS PASZTOR, a national of Hungary, has been appointed Chief, Secretariat of the Environmental Management Group (EMG). Mr. Pasztor holds a Master's Degree in Energy and Chemical Engineering from the Massachusetts Institute of Technology (MIT). Throughout his career, Mr. Pasztor has participated in high-level environmental negotiations. He began his professional career in the field of environment in 1979 and worked for more than 10 years with NGOs and academia before joining the secretariat of the UN Conference on Environment and Development in 1990. Since 1993, Mr. Pasztor has held senior positions with the UN Framework Convention on Climate Change (UNFCCC), including as UNFCCC

representative in the EMG and Coordinator of the Project-based Mechanisms Programme.

French President Jacques Chirac has appointed NICOLAS HULOT to the Organizing Committee of the International Conference on the Environment scheduled to take place in Paris in February 2007. A French TV personality and leading environmentalist,

Nicolas Hulot has been highlighting the environmental costs of globalization for the past 20 years as the presenter of the highly-acclaimed TV eco-magazine "Ushuaia". Now in his mid-fifties, he is increasingly active in the political arena as well, for instance initiating the Pacte écologique, which calls on all candidates for the upcoming French presidential elections to place environmental concerns at the forefront of their political agenda.

MELS ELEUSIZOV, the leader of the Kazakh environmental organization Tabigat and a former presidential candidate, is once again mobilizing his compatriots in a bid to prevent the further deterioration of Lake Balkhash, which may soon be the site of a new nuclear power plant. Lake Balkhash is the 15th largest lake in the world, covering more than 16,000 square kilometres. Due to a number of environmental and man-made influences, such as less rainfall and the construction of a reservoir on the main tributary, the Ili River, the lake's water level is falling rapidly: by up to

2.3 meters in recent years. If nothing is done, the lake could face a similar fate as the neighbouring Aral Sea.

Bangladeshi economist MOHAMMAD YUNUS, founder of the Grameen Bank, was awarded the 2006 Nobel Peace Prize for his vision in providing micro-credit facilities, predominantly to women, so they can establish income-generating schemes to free themselves and their families from poverty.

Recognizing the link between poverty and environment, several UNEP initiatives use the micro-credit principle pioneered by Dr. Yunus, especially those related to promoting environmentally sustainable energy technologies at home and village level.

ROY SESANA leader of the Bushmen of the Kalahari, also known as the San people, won a landmark case against the Government of Botswana in December 2006. The Government of Botswana, which had evicted more than 1,000 San people from their traditional home range in the Kalahari game reserve, preventing them from following a lifestyle they had pursued for millennia, accepted the ruling that said it had acted illegally in cutting their water supplies and compelling them to move to settlements on the edge of the reserve.

global issue

by Joseph Stiglitz

The world is engaged in a grand experiment, studying what happens when you increase carbon dioxide and other greenhouse gases in the atmosphere by larger and larger amounts. The scientific community is fairly sure of the outcome – and it is not pretty. The gases act like a greenhouse to capture solar energy and, gradually, the Earth warms up. Glaciers and polar ice melts, ocean currents change, and sea levels rise. It is not yet clear how long this will take to happen, but it has been taking place far faster than even many pessimists thought even ten years ago, with far more adverse consequences.

If we had access to a thousand planets, then you could imagine conducting such an experiment on one, and if things turned out badly – as the vast majority of scientists worry it will – moving on to the next. But we don't have that choice; there isn't another planet we can move to. We're stuck here on Earth.

No issue is more global than global warming: everyone shares the same atmosphere. So while the United States alone adds almost six billion tons of carbon dioxide to it every year, contributing to climate change, everyone everywhere else will suffer the consequences. If the greenhouse gases emitted by the United States stayed over its territory, America could conduct its own experiment to study the results of filling the air over its cities with these gases. But, unfortunately, carbon dioxide molecules do not respect borders. ➤

And though emissions from the U.S. or China or any other country affect the *global* atmosphere, the United States (or China, or any other country emitting greenhouse gases) does not have to pay for the consequences of its pollution outside its borders. Thus, it has insufficient incentives to conserve.

As I point out in my recent book, *Making Globalization Work*, America — in spite of its protestations — can well afford to reduce pollution: there are countries that emit only a fraction as much greenhouse gases per person while enjoying just as high a standard of living. But not taking responsibility for its emissions does give American producers a competitive advantage over producers from countries that are doing something about their pollution. It is not surprising that many countries have not reduced their emissions. It is more so that — as part of the 1997 Kyoto Protocol -- European countries, Japan, and a few others have put their own self-interest aside, in the interest of the well-being of the whole world, and agreed to do so.

As with so many aspects of globalization, it is the poor that are most likely to be most adversely affected — and they lack the resources to adapt to the consequences. Bangladesh and the Maldives are being threatened by forces beyond their control — the polluting actions of others — with a fate far worse than is caused by even the worst of wars. Much of Bangladesh is a low lying delta, great for rice growing, but vulnerable to even small changes in the sea level, and frequently buffeted by deadly and destructive storms. If, as a result of global warming, those storms get more intense, the annual death toll will soar. If sea levels rise, one-third of the country will become submerged, and some 140 million Bangladeshis will become even more crowded together than now. Their incomes, already barely above subsistence, will fall still further.

And Bangladesh is not even the country likely to be worst hit. Once viewed as a tropical paradise, the Maldives — a small island state of 1,200 islands and 330,000 people in the Indian Ocean — will be totally submerged in as little as fifty years, according to reliable predictions. Along with many other low-lying islands in the Pacific and elsewhere, it will simply be no more - our own 21st century Atlantis.

Important as the Kyoto Protocol was, it left out some 75 per cent of the sources of emissions: the developing countries have no obligations; America, the world's largest polluter, did not sign on; and nothing was done about deforestation, which contributes vastly to global warming.

Efficiency requires reducing greenhouse gas concentrations in the most cost-effective manner. Planting forests may be one way, but it may be even more efficient simply to preserve the world's rainforests, mostly located in developing countries. Deforestation is bad for the atmosphere for two reasons: there are fewer trees converting carbon dioxide into oxygen; and carbon stored in the wood is released into the atmosphere as it burns or decomposes.

Tropical rainforests not only reduce the level of carbon in the atmosphere: they also help preserve biodiversity. Many medicines, for example, have made use of this precious resource. The Biodiversity Convention, signed in 1992, was designed to ensure its maintenance — including providing some incentives for developing countries but, regrettably, the United States has refused to ratify this agreement too.

The 2.7 billion people in the over 60 developing countries that contain these tropical forests are not being compensated at all for the enormously valuable environmental services they provide for the whole world. Though it is difficult to assign a value to preserving biodiversity, we can obtain rough calculations of the benefits of, say, reducing the annual rate of deforestation by a modest 20 per cent. In late June 2005, for instance, carbon was trading at around $30 a ton on carbon emissions markets. At that price, the annual value of this avoided deforestation is between $30 and $40 billion a year. By comparison, according to the OECD, all foreign assistance to developing countries was around $78 billion in 2004.

The forests also 'clean' the carbon dioxide out of the atmosphere. These 'negative' emissions of the rainforest countries are estimated - at the same $30 dollars a ton - to be worth some $100 billion a year. Compensating developing countries for the environmental services that they provide would

not only be fair and help their economies, but provide incentives for them to maintain their forests. It would also help give them the resources that they need to prevent illegal logging.

In principle, this would be relatively easy to do by carbon trading. Just as many energy companies in Europe buy 'carbon offsets' (allowing them to emit more carbon than otherwise would be allowed) by paying for the planting of a forest in a developing country, so countries could be paid for not cutting down their trees. Yet the Kyoto Protocol allows compensation only for planting forests, not for *avoiding* deforestation. So rainforest countries are doubly better off if they cut down their ancient hardwood trees and then replant. From a global perspective, this obviously makes no sense. What is needed is simple: developing countries should be given incentives to *maintain* their forests.

Now a group of developing countries, led by Papua New Guinea and Costa Rica — the Coalition for Rainforest Nations – has come forward with an innovative proposal. They are offering to commit to greenhouse-gas limits, but ask to be able to 'sell' carbon offsets, not just for new forests, but for avoiding deforestation. This would ensure their most efficient use from the global perspective by maintaining them as forests, rather than harvesting them for timber. At least twelve developing countries — including Costa Rica, Nigeria, Vietnam and India — support this new organization, announced by Sir Michael Somare, Prime Minister of Papua New Guinea, at Columbia University in New York, in January 2005. A team at the university is working on the technical details.

Without some form of compensation for maintaining their forests, developing countries have neither the means nor incentives to continue underwriting conservation. Cutting them down — even when they presently receive only 5 per cent of the final price the wood fetches in, say, New York — is the only way their impoverished people can make ends meet.

Some have suggested waiting to address this issue until 2012, when a revised Protocol is supposed to come into effect. But can we afford to do so? At current rates of deforestation, the combined contributions to greenhouse gas concentrations from Brazil and Indonesia alone offset some 80 per cent of the emission reductions gained from the Kyoto Protocol. It is urgent to fix the problem now so that deforestation does not undo Kyoto's gains. And some of the ancillary damage — the loss of old hardwood forests and biodiversity — may be reversible if we act soon.

What is so impressive about the new rainforest initiative is that it comes from the developing countries themselves, demonstrating their creativity and social commitment. For the first time, they seem willing to undertake the kinds of commitments that Europe, Japan, and the advanced industrial countries (other than the U.S.) have made to avoid what could be a global disaster.

Costa Rica, which pays its citizens for preserving their forests, has already shown that a system of reimbursement for providing environmental services can work in ways that preserve the environment, boost the economy, and benefit small landholders. It has had enormous success not just in avoiding deforestation, but in significantly increasing forest cover, even though it receives only limited compensation from the advanced industrial countries for its 'carbon services'. But it has benefited from the tourism (and specifically, from the 'eco-tourism') that its rainforests attract, and which it has vigorously promoted. Most of the other rainforest countries stand to gain less from tourists — and, for them, the best *private* use of their forests still remains cutting them down.

Global warming and global poverty are two of the greatest problems facing the planet. The ingenious Coalition for Rainforest Nations would make a major contribution to tackling both. It is based on the most basic of market principles — incentives — and enhances the global efficiency with which the global community addresses global warming. It is a rare opportunity through which the world could do well for itself, and simultaneously do good for many of those in most need.

by Connie Hedegaard

of securing the full deployment of these technologies and practices needs to move increasingly from government to business, industry and civil society. We must establish a framework where the demand for green technologies, practices and services is communicated from the bottom up, and where the governments' procurement, collectively or the sub-

friend, not foe

by Pascal Lamy

Opening up trade can help us save some of the world's scarcest and most precious resources, by leading to their more efficient allocation. Indeed, the 2006 *Human Development Report* on the global water crisis from the United Nations Development Programme (UNDP) draws attention to one of the main contributions it can make to environmental protection. The report sheds light on the magnitude of the 'virtual trade in water' that takes place through trade in food. In 2000 this was estimated to be 1,340 billion cubic meters — three times its 1960 level — representing a quarter of the water required to grow food worldwide.

Virtual water trade is nothing other than an exercise in *comparative advantage*, allowing for a more efficient distribution of this vital resource on a global scale, and can induce water saving. If a country such as Egypt were to grow a volume of cereals equivalent to its national imports, it would use up a sixth of Lake Nasser, the Aswan Dam's reservoir! Trade allows countries that are rich in water to share it with drier lands, letting them conserve their precious and scarce supplies for essential use. Water, of course, is only one example of the natural resources that can be saved through trade — albeit an important one. So trade can be a friend, not a foe, of conservation.

UNDP tells us, however, that for the virtual water trade truly to be beneficial for the environment, countries must redress the perverse incentives that they sometimes create for overusing this resource. In many parts of the world, water pricing does not reflect its true cost; failing to internalize the negative environmental, social and other externalities that come with depletion or misuse. Can the World Trade Organization help rein in these mistaken incentives? Yes, in so far as they distort trade and are encompassed by its mandate. Some of the water subsidies mentioned in the report would indeed be reduced through the Doha Round of trade negotiations, which contains an important agricultural chapter. The WTO knows that one of the ways in which it can help the environment is by accelerating the removal of trade distortions that hurt natural resources. It is a vital complement to the role it plays in allocating these resources efficiently across the globe.

Other examples abound. Take the fisheries chapter of the Doha Round. There, too, members are trying to develop new rules to contain the harmful subsidies that some governments hand out, encouraging, as the saying goes, "too many fishermen to chase after too few fish". A multilateral agreement that disciplines these subsidies would allow the fish trade to 'save', rather than exacerbate, the plight of certain stocks, and would lead to a better allocation of fisheries resources world-wide.

Proponents of these new rules argue that the estimated $14-20 billion of annual subsidies are depleting the world's fish stocks by inflating the size of the global fishing fleet, which now stands at some 24,400 large-decked ships and well over 2 million smaller commercial craft. The fleet's size — combined with massive advances in fishing technology, particularly trawling — have caused alarm. In 1950, our fish catch amounted to 20 million tons; by 2003 it had soared to 81 million tons. But did our fish stock also grow? Sadly not. Instead, some of the world's oldest fish species are on the verge of extinction. Luckily, the WTO is not fighting this battle alone, since the problem is not limited to subsidies. The Food and Agriculture Organization, for instance, is also heavily involved, looking at different aspects of the problem.

In the Doha Round, countries decided to combine the positive role that opening up trade plays in efficiently allocating resources, with a set of negotiations specifically targeted at the environment — the first time environmental issues have ever featured in the context of a multilateral trade round. The negotiations include the relationship between WTO rules and multilateral environmental agreements. While there is no conflict between trade and environmental regimes — and the Appellate Body has repeatedly confirmed that the WTO can take other bodies of international law into account when interpreting its own rules — they nevertheless seek to ensure that these legal regimes operate harmoniously. They also encompass the issue of accelerating the opening of trade in goods and services that can help protect the environment or conserve natural resources – such as air filters, catalytic converters, windmills, or the environmental consultancy services that often accompany them.

Much international attention this year has been devoted to climate change. As Kofi Annan, the UN Secretary General recently noted, its impact will extend far beyond the environment to endanger the world's food security, even its peace and stability. Indeed, the recent *Human Development Report* pointed in the same direction, linking climate change to the growing water shortage facing the world and warning of a water crisis. The environmental negotiations that have been launched in the Doha Round can make a modest contribution to solving what is undoubtedly one of the most serious environmental problems that the world has ever known. First, they can reaffirm the need for a harmonious relationship between international trade and international environmental law; and, second, they can open markets for goods and services that can help prevent and combat climate change. It is an unfortunate reality that clean technology is not available in many parts of the world. By imposing restrictions on the entry of this technology, the world ends up penalising — rather than encouraging — pollution prevention and control.

Let me hasten to add, however, that I do not believe that the WTO – which is primarily a trade organization — can save the environment alone. By ensuring a better allocation of resources on a global scale – and by ensuring the transparency of trade measures adopted on environmental grounds — the WTO merely creates the premise from which environmental protection efforts must start. Trade must be accompanied by many other policies for its promises of welfare enhancement and sustainability to materialize.

market messengers

by Massoumeh Ebtekar

In our globalizing world, economic, social and — above all — political policies determine the fate of our environment. Such issues as global climate, biodiversity, the ozone layer, and pollution have arisen as a result of international decision making processes, as well as local policies.

Much has been done, but what has been achieved is much less than what is needed and has been promised. A seemingly endless string of reports on global indices demonstrate an ongoing and, at times, alarming trend of unsustainability. People ask whether global leaders are prepared to mend their ways and bring about serious change in their policies and actions, affecting their lifestyles, attitudes and behaviours — and those of their nations.

A Persian proverb says: "Someone was sitting on the end of a branch while cutting the branch's stem!". We are living on the blessings of nature. The wealth of biodiversity and its services are life support systems upon which we rely. But we have used every opportunity to damage these treasures under the pretext of want or need. Our existence depends on nature, yet we take every action to undermine it.

The globalization process has irreversibly transformed the social, political and economic landscape of each continent, bringing in its train all its merits, shortcomings and challenges. The printed and audio-visual media, and the internet, are central themes. Democratization brings opportunities for freedom of expression, vital for the social, political and economic development of societies — yet, in practice, this may transgress moral and ethical norms and fall prey to the materialistic aspirations of the market.

Never before have we been able so profoundly to shape not just local attitudes but to reach into the homes of billions: MTV alone claims to attract 700 million viewers daily. Interconnected information highways facilitate exchange of news, information and knowledge between citizens and societies — though the digital divide makes developing nations subordinate, with less access and virtually no control.

More importantly, the ubiquitous media and their enchanting performers are instrumental in shaping the mentality of societies, and thus the global community. Ominously, their policies are guided and shaped not by cultural and social norms but by market values and business preferences. No institution of the learned and wise can begin to estimate the harm this is doing daily to human society.

Their products are blatantly consumerist and materialist. In the mega-industry of commercial cinema everything is overshadowed by the dazzling Hollywood silver screen. Local attempts to create high-quality alternative images have emerged, but market-oriented policies still dominate culture. The root causes of insecurity and restlessness may lie in our cultural approach and in how we deal with peoples' hearts and minds.

Alarming rates of cinema violence, explicit scenes and allusions, the irresponsible behaviour they portray — and the agitated messages of restlessness emanating from pop culture – shape the thoughts and behaviour of future generations. Democratization is expressed in many societies only as a variant of social freedom, while political freedoms are repressed. The western model of democracy is marked more definitively by this kind of freedom of expression than by genuine participatory political freedoms.

What percentage of messages in the film industry encourage environmental protection? What percentage encourage families to take an unwavering interest in the intellectual and moral upbringing of children? What percentage encourage peace making, conflict resolution, understanding and altruism? Do we get a sense of collective understanding — or a sense of insatiable personal lust and desire — from the messages coming from the television and big screen? According to all research, this is the most effective and profound means of communication ever devised. As with the natural environment, our tendency runs towards self-destruction.

It is naive to expect change in unsustainable trends in the global community without change in cultural and educational policies. Public opinion and general knowledge on the importance of environmental protection cannot be promoted by governments while the media market their irresponsibly attractive products instigating violence, hatred and disrespect for nature.

The globalization process has awakened many to the stark realities of our age. Environmental degradation, recurring armed conflict and war, and the excesses of consumerist societies cannot subsist if humanity is to survive. Dramatic changes in policy and practice have been urged in international documents produced by a broad consensus. Some world leaders agree: others do not. Some agree, but claim they do not possess the resources. Others agree, but do not possess the will. And yet another set of leaders do not have the democratic processes which can make such transformations possible.

Among world leaders in disagreement are those who stubbornly cling to the belief they are living on an isolated island of stability. They dismiss the idea that global warming, biodiversity loss, contamination by persistent organic pollutants, and ozone destruction are undermining the future of 'their' society. Their narrow vision completely misses the seriousness of our circumstances.

International decision making systems should rely on the collective rationale — stemming from the collective consciousness which, in theory, should decide for the good, if given proper information and freedom from outside pressure. Yet, in reality, the driving power lies in the hand of the market, the media and the military. Greed — not the logic or rationalism that we profess — guides our decisions and our actions. Greed and selfishness have taken the reins of global decision making.

UNEP and relevant international, regional and local NGOs should launch an imperative global campaign for media leaders and members to join, to change course, to direct their affairs on the basis of cultural and ethical values and to promote responsible behaviour and love for nature and human kind as their main message.

This will require extensive effort and changes in media and educational policies. It is not possible to deify freedom of expression and yet protect the rights of children and youth. The young are the easiest target for opportunists aiming to market their products and transform their customers' thoughts and behaviour — tailor-fitting them for their commodities but making them unfit for the role of responsible, psychologically and intellectually balanced, environmentally friendly global citizens who cherish life and the dignity of fellow humans and are prepared to see beyond their egos and selfishness into the future, towards eternity.

As a religious democracy, The Islamic Republic of Iran sees religion as a means of mobilizing people to take responsible environmental action. The reform government of President Mohammad Khatami embarked on a cultural campaign to transform attitudes on environmental issues. Hundreds of NGOs were grown. The film industry responded to a biannual international Green Film Festival, with hundreds of films of all kinds. Most interestingly of all, 1,100 sites in more than 500 cities and towns were part of a nationwide environment festival in 2005, which brought a wave of cultural change: everyone began speaking and thinking about and for the environment.

We are all champions of the earth if we rein in our excesses and collectively work to promote a culture of responsibility and accountability — one of ethical and moral respect for fellow-humans, nature and life. This ethic may be found in religious teachings or in the treasures of civilizations, or discovered in the pure hearts and minds of youth where conscience, a divine spirit and an urge for perfection still lives. We may discover these treasures in dialogue and understanding. This may be our only recourse — the only option left.

beyond reform

by James Gustave Speth

Many efforts have been made internationally over the past quarter century to cope with the major threats to the global environment. In many respects this exercise of planetary stewardship has been impressive. But, in reality, these efforts have been inadequate, and the disturbing trends that drove action in the first place by and large continue. The question,therefore, is how best to improve global environmental governance.

There are two main camps among the scholars and writers starting to look deeply into the issue — institutional reformists who want to make the system of treaty regimes and international institutions work much better and those who believe far deeper changes are necessary.

Reformists tend to believe that our first attempt at global environmental governance, which focusses mainly on international environmental law, is basically on the right track. The others agree on the need to strengthen the current approach, but believe that deeper and more difficult changes will be needed in order to move to environmental sustainability.

One reformist vision involves creating a World Environment Organization. If we were writing on a clean slate — approaching afresh the question of what international regulatory organizations should be created — the case for it would be very strong. We live in a world where pollution knows no boundaries and where trade, technology, and investment flows are increasingly international.

A WEO could be quite modest or quite powerful. In one model, UNEP would become a specialized agency of the United Nations, gaining in stature, size and independence. This would enlarge its financial resources and provide a more efficient and effective structure for governance and leadership. The next step would bring the various environmental treaties together under the new WEO. The most ambitious idea would create a world environment agency entrusted with setting international standards and enforcing them against laggard countries. In practice, it might be wise to begin at the modest end of the spectrum and gradually strengthen the new organization as trust and confidence build.

Another vision conceives of opening the door for the public to participate in the treaty process. Until citizens can have their say in international fora, get the information they need, submit petitions for action and complaints for noncompliance, participate in hearings and initiate judicial proceedings to enforce international law — all available in many countries in a domestic law context — international environmental law and policy will never have the dynamism it so badly needs.

A third reformist vision is to take a major step outside the world of conventional regimes and explore the idea of 'Global Issue Networks' to reach an effective 'global accord' on major environmental issues by a quite different path. This realizes that, while the intergovernmental system is often bogged down in endless and ineffectual wordsmithing, there is enormous new potential in the world outside governments.

The most elaborate discussion of global issue networks is provided by J.F. Rischard in *High Noon: 20 Global Problems, 20 Years To Solve Them*. He sees one on, say, tropical deforestation, beginning with a 'constitutional phase' in which an existing agency hosts a event for stakeholders from governments, Northern and Southern NGOs, and potentially affected business and commercial interests. It then moves to the 'norm-producing phase' in which a rough consensus is arrived on key questions (What exactly is the problem? Where do we want to be in twenty years? How do we get there? What should the norms and standards be?). This, in turn, is followed by an 'implementation phase', in which the major emphasis is on "creating reputation effects through naming-and-shaming". Countries and other players are rated against the norms, public and peer pressure deployed to promote better performance from laggards.

These emerging processes would not be possible without the growing vitality and — thanks to the Internet — the growing connectivity of the international NGO community. There are estimated to be 100,000 NGOs working for environmental protection worldwide, and some have become transnational, focussing on global change. Of course, governments remain enormously important, and it would be essential also to involve their officials in these global issue networks.

By contrast with these reformist ideas, others argue that deeper changes must be undertaken to address underlying causes. Though they do not all agree on what the root causes are, some tend to see them deriving from structural factors having to do with economic inequality, absence of political representation, and undeveloped environmental sensibilities among most of the world's people. Some of those urging these alternative approaches see them as important complements to environmental regimes; others see little hope for this approach.

Three recent books — Lester Brown's *Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble*, Paul and Anne Ehrlich's *One with Nineveh: Politics, Consumption and the Human Future*, and my own *Red Sky at Morning: America and the Crisis of the Global Environment* — contend that global environmental conditions are steadily worsening, current efforts to address them are inadequate, and that major new initiatives are needed to address the underlying drivers of deterioration. They share similar views on the need to slow population growth, bring on a new generation of environmentally benign technologies, end rampant consumerism, and make prices and market systems work for the environment. The first step in taking action to curb these drivers of deterioration is for governments, NGOs and business to decide that they must be addressed systematically: it then becomes possible to work out the specific steps the international community can take.

Meanwhile, Paul Hawken and Amory and Hunter Lovins seek to co-opt and green capitalism, not reject it — as the title of their book, *Natural Capitalism*, suggests. They describe the way new technology and techniques can be put to good use, and are clear that governments must intervene to make the market work for the environment rather than against it. They also offer a radical vision of how capitalism should work, backed by the hope that the business community will become the principal vehicle for addressing many global-scale environmental challenges.

Others — like those associated with the International Forum on Globalization doubt that such challenges can be addressed unless much is done to curb corporate power and reshape the present process of economic globalization. They believe that globalization is is intrinsically harmful to the environment because it is based on ever-increasing consumption, exploitation of resources, and high energy use, and argue that not much can be done about negative environmental trends without far-reaching changes in the way economic and political power is distributed in modern society.

They see the solution in assertive local control. Indeed, a surprisingly diverse array of local organizations and communities — taking the slogan "Think Globally, Act Locally" to heart — are impatient with international processes and believe the way forward is to "just do it" by working toward sustainability in everyday life and in local communities.

Individuals and communities can also exert influence as voters and citizens, as investors, as consumers, as association members, as workers, as activists, and as educators. This is already beginning to happen in the United States, where citizen initiatives and local action are beginning to address the global problems of energy and climate change. Meanwhile, Washington itself does little.

Over the last 30 years, therefore, the international community's quest for planetary stewardship has encompassed a variety of intergovernmental, governmental and civil society initiatives. The results are mixed and generally conceded to be inadequate. The disturbing trends in deterioration continue. It is also widely conceded that a much stronger system of environmental regimes is essential, but those most deeply concerned have looked beyond this and asked what else must be done. Several themes run through their efforts:

- The intergovernmental processes that constitute regimes are too closely allied with the forces that gave rise to the problems in the first place to produce real change.
- Real change is only possible if we address the deeper issue of the forces underlying deterioration.
- The search for these underlying drivers leads quickly to institutions and ideas of extraordinary power: the large multinational corporations and their influence on major governments; an unflagging commitment to high rates of economic growth; a consumerist and anthropocentric culture.
- Efforts fundamentally to change this operating system are essential, whether through wooing and conversion, creating powerful new incentives and disincentives, cutting its power centers down to size, or eroding its monopoly through community-based and other bottom-up initiatives.
- None of this is likely unless civil society ascends to a new prominence and new roles, and engages in a new politics of the global environment.

Integral to the needed transformations is a change in values - a transition to new habits of thought and a new consciousness captured well in the *Earth Charter*, which urges us " to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace."

banking on the

oor

by John Elkins

Big problems need big solutions, or so the traditional thinking goes. Four billion people living on less than $2 a day, over one billion people without access to clean water, and millions of people dying every year from preventable diseases or famine. Soil erosion, loss of biodiversity, global warming — the list goes on and on. Mohammed Yunus, who was recently awarded the Nobel Peace Prize for his pioneering work in microfinance, took a different tack — empowering individuals with small loans to create economic opportunities for themselves and their families. It is a potential global solution starting with small steps solving individual problems.

By providing financial services to underserved markets, microfinance can serve as the cornerstone of economic development, stimulating real growth and making a significant contribution toward the achievement of the Millennium Development Goal on poverty eradication. It provides the power and opportunity to tap into the spirit of entrepreneurship existing in low-income communities all over the world. And it can start a virtuous circle of better health, better education and more opportunities for the next generation.

Big problems can seem intractable. Small problems, however, seem possible to solve and the business community likes to act, to see tangible progress: The buzz-words often heard on Wall Street — "beating expectations", "delivering value" and "accountability" — are a reflection of the business community's focus on results. Taking the energy, focus, discipline, and capabilities of business and putting this to work to solve some of the toughest and most intractable global problems, was the key premise in the economist C.K. Prahalad's groundbreaking book *The Fortune at the Bottom of the Pyramid*. Active engagement by the business community improves people's lives - and there can be new, commercially viable and scalable business opportunities reaching into these new markets, and benefiting everyone.

Companies may not seek tremendous profits from the bottom of the economic pyramid - indeed, it might be unethical to do so - but they do have a responsibility to bring their expertise and knowledge to bear to try and solve problems. This approach bridges the vision of Prahalad's 'bottom of the pyramid' strategy and the reality of the focus of most commercial enterprises. Our expertise at Visa is building efficient and secure payments networks. Our natural role, therefore, is to bring this to the microfinance community and work closely with it, allowing more of their capital to be invested in small loans and less in the infrastructure and information systems needed to manage the business.

Visa's currently small portfolio of microfinance programmes should be considered to be a start. Engagement with grass-roots organizations actively working in local communities, together with a willingness to learn, is the key to building the for-profit business case. This transition to 'enlightened self-interest' — adjusting our business models to be able to utilize existing infrastructure for this market opportunity in a commercially viable and sustainable way — is the necessary next step for broader investment and activity.

The clear alignment of Visa's capabilities with the unmet needs of the growing microfinance community will translate into a business case and improve the ability to bring the benefits of microfinance to scale. There are clear benefits to three important stakeholders in moving away from cash towards greater use of electronic payments:

The Client: The majority of microfinance loan recipients are women; they typically receive their loans in a lump sum and in cash, making them highly vulnerable to theft and fraud. Rather than cash, these women have a prepaid or debit Visa card in their pockets. Their funds are safe from theft and they can access them when and as they need them. Research in a pilot programme in Guatemala showed that an increased sense of security was one of the main reasons the microfinance clients liked having a Visa card.

The Microfinance Institution (MFI): Migrating to electronic disbursement and collection of loans can reduce the burden of collecting, distributing and managing lots of small cash loans. Improving the MFIs' efficiency is going to be important if they are to reach the estimated 300 million people who could benefit from access to microfinance. It allows them to serve their customers better, manage their resources more efficiently, offer new products, and extend the benefits of microfinance to a larger percentage of people. And in some competitive microfinance markets, it can serve to differentiate one MFI from another.

The Financial Institution: Banks have the electronic payments infrastructure but lack the experience and ability to manage risk and train the target market. MFIs have the one-to-one consumer relationships but no access to electronic payment infrastructure to get to scale. Local commercial banks can benefit in various ways from commercial microfinance opportunities. They gain access to a new customer segment, can cross-sell non-competitive products and also benefit from new deposits and new income streams from the increased use of Visa debit, credit and prepaid cards at the point-of-sale.

Visa's strategy, therefore, is to encourage bank partnerships with MFIs, thus uniting the convenience and security of cards and electronic payments with their powerful grassroots outreach. All of this supports our global efforts to bank the un-banked and increase access to the formal financial sector for low income consumers.

It is sometimes easy to get caught in intellectual arguments about different approaches to the big issues of the day — to ruminate on Jeffrey Sachs's or William Easterly's divergent views on meeting the Millennium Goals for eradicating poverty, for example. Or to discuss whether commercial enterprises have a helpful and worthwhile role to play in expanding the role of microfinance or are simply profiting from it, at the expense of the poorest in the world.

The reality, as in most things, lies somewhere in between. There are going to be situations where not only are there no viable business cases, but no ethical system that could support a for-profit business model at the very base of the pyramid. There is always going to be a role for philanthropy, whether private or governmental. However, there are also going to be plenty of opportunities for the business community to deploy its expertise and capital, to build a sustainable business case, and empower individuals to change their lives for the better while enabling a more targeted use of philanthropic funds for those for whom this is the only moral and practical way to provide assistance.

Just as Dr. Yunus didn't get overwhelmed by the sheer size of the problem but focused on small solutions that can be scaled up, we shouldn't get distracted by these theoretical discussions. Microfinance works, and where business can play a constructive role in increasing efficiency and effectiveness by bringing their core competencies and expertise to this opportunity, it can and should benefit. Visa is certainly committed to extending its infrastructure, products and expertise to address this important market opportunity while improving the lives of the millions of underserved people around the world.

wanted: political

by Sunita Narain

The world is interconnected but it is not 'one'. We have collectively failed to secure a common future for all. In spite of the many millions of hours of negotiations that governments have expended to stitch together multilateral environmental agreements — from climate to persistent organic pollutants — the world is even more divided and even more at risk of global environmental damage than when we embarked on this journey. This, then, is the time to step back, to consider and to re-engineer directions so that we can indeed make the difference.

In the last 15 years, the world has seen a growth of intergovernmental negotiations to formulate international environmental treaties. This 'ecological globalization' is the result of the ongoing processes of economic growth and economic globalization, which not only stitch the world's economies together, but take national production and consumption levels to a point that threatens the world's ecological systems.

The predominant economic model is highly material and energy-intensive, metabolizes huge quantities of natural resources, and leaves a trail of toxins and highly degraded and transformed ecosystems in its wake. The process of ecological globalization is driven by the fact that levels of production and consumption have reached a stage that what one does in one's own country can have major impacts on neighbouring countries or even on the rest of the world. Never before have human beings needed so much to learn to live in 'one world' as we do now.

The problem is that the two processes of globalization outlined above are not accompanied by any form of political globalization. So there is no process that has any interest in ensuring that the emerging global market or the emerging global ecological policy is managed in the best interest of the maximum number of people — and on the basis of the principles of 'good governance', equality and justice. We have also seen that there is very little political will on the part of world governments to put these issues on the political agenda.

We now know with much greater certainty that global warming is beginning to change our world for the worse. Evidence shows not just that climate change will be disastrous for countries, particularly the poor, but that it would cost the world much less if it invested today in mitigating emissions than it would need to spend in the future when climate catastrophe is on our head.

The warming of the global atmosphere is possibly the biggest and most difficult economic and political issue the world has ever needed to confront. This is so, firstly, because emissions of carbon dioxide are directly linked to economic growth. So growth as we know is on the line. We will have to reinvent what we do and how we do it. There will be costs, but they will be a fraction of what we would otherwise need to spend in future.

Secondly, the issue is about sharing that growth between nations and people. Global economic wealth is highly skewed - and so are emissions of greenhouse gases. The question now is how the world will share its rights to emit (or pollute) or whether it freezes inequities. The question is whether the rich world — which has accumulated a huge 'natural debt', overdrawing on its share of the global commons — will repay it so that the poorer world can grow and use the same ecological space?

Thirdly, climate change is about international cooperation. It teaches us more than anything else that the world is one; if the rich world pumped in excessive quantities of carbon dioxide yesterday, the emerging rich world does so today. It also tells that the only way to build controls would be to ensure that there is fairness and equity in the agreement, so that this biggest-ever cooperative enterprise is possible.

What must we do to avert climate change? We must accept that the world needs to go beyond the commitments under the Kyoto Protocol. The way forward would be to re-negotiate the world's agreement. But this time the agreement must be political. It must reflect the desperate urgency of the world faced with catastrophe. It must be fair and it must be meaningful. In other words, it must not take the world another 15 years to cut emissions and get something as weak and pusillanimous as the current Kyoto Protocol.

There is clear understanding that the rich and the emerging rich worlds need to make the transition to a low carbon economy. There is also much better understanding that the route ahead is made up to technologies that we already have in hand. This is not about inventing new things, but about using the technologies of the present much more efficiently and effectively. So answers will lie in increasing efficiencies in both generating energy and in using it in manufacturing other products. It will also lie with the change in how we do things — from transportation policies in our cities to everything else. The fact is that we know how to change.

It is also clear that the emerging rich world — China, India and others — are already showing themselves to be more efficient per unit of output within their limited means was than the industrial world. They would want to make this transition, if compensated for their efficiency.

Ultimately, climate change is the true globalizer. It forces our world to come together not just to make short term profit for some, but long term economic and ecological benefits for all. The challenge is ours to take.

globalization

paradigm clash

by Martin Khor

The clash between the differing paradigms of sustainable development and unfettered globalization is now sharper than ever. It should to be resolved as soon as possible. The future of humanity — and the Earth depends on this.

On the one hand, there is a resurgence in recognition of the heightening environmental crisis, manifested in fever-renewed concern over such issues as climate change, energy depletion, deforestation, biodiversity loss. But, on the other, there is persistent promotion of the drivers of the crisis — unregulated growth, unfettered market forces and increased 'competitiveness' — which accelerate both resource use and pollution.

The 1992 Rio Earth Summit provided the impetus for the sustainable development paradigm with its three components of environmental, economic and social sustainability. It recognizes not just the environment crisis in its many facets, but how it is embedded in economic and social systems. And it understands that a realistic and long-term solution must deal with both the environment and the development crises simultaneously and in an integrated fashion.

Two principles underpin 'sustainable development'. The precautionary principle asks us to act urgently when grave environmental harm is likely, even if all the facts are not completely available. And the principle of 'common but differentiated responsibility' acknowledges that the North is, and historically has been, most responsible for the crisis — and has more resources, as well as a greater responsibility for resolving it. The South must also play its role — but must be helped with financial resources and technology transfer, and should not be made to bear an unfair share of the burden of global adjustment.

Development goals, poverty eradication and providing for human needs should be top priorities: environmental concerns should be integrated with (and not detract from) them. Sustainable development would involve ecological practices that enable meeting the needs of future generations, and equitably change production and consumption patterns, so that resources now being wasted are saved and rechannelled to meeting the needs of everyone now alive, and of future generations.

By contrast, the paradigm of unfettered market forces — which characterizes the present brand of globalization — pushes for vastly expanded rights and 'freedoms' for the large corporations that dominate the market: the state should intervene only minimally. Though it recognizes that there are environmental and social side effects, these should be dealt with through market instruments rather than regulation, and by charity and 'social safety nets' rather than a re-design of the core economic paradigm.

With the ascendancy of this paradigm, especially following the establishment of the World Trade Organisation (WTO) in 1995, development values and principles have been downgraded in international relations. In its place is a Social Darwinian philosophy of "each individual for himself/herself, each firm for itself, each country for itself."

In this law of the social jungle, it is the right of individuals and companies to demand freedom to seek advantage and profit and to have access to the markets and resources of other countries anywhere in the globe, to implement their right to profit. The advocates of this approach want a free-market system where the strong and 'efficient' are rewarded, and the weak or inefficient unfortunately have to lose out. Aid can be advocated and even increased to offset the glaring inequities, but the principles and practices of the market cannot be touched.

These two paradigms have clashed dramatically in international affairs. The paradigm of partnership and cooperation is represented by the United Nations' series of world conferences, in which global problems relating to the environment, women, social development, habitat, and food were sought to be discussed and resolved in a consensus-seeking framework. It was recognized that, left to itself the market would be more of the problem than the answer, and that governments – both individually and jointly – must temper it with social and environmental priorities and programmes.

In contrast, the free-market paradigm is represented by the Bretton Woods institutions — which have persisted in promoting reforms in developing countries based on a narrow concept of macro-economic stability, privatization and liberalization — and by the WTO. The latter was initially criticized for being too 'free market' in orientation: in fact it is a combination of liberalization and protectionism.

The developed countries, which by and large still dominate the WTO, make use of it both to push open the markets of the developing world, and to protect their own turf. Thus, the North presses for liberalization of goods, investments and financial flows, but resists Southern requests for liberalizing the flow of labour and technology. The WTO's agreement on trade-related intellectual property rights (TRIPS) is anti-competitive, designed to increase the monopoly of large corporations, and hinders technology flows.

There is a double standard even within the core area of trade in goods. Developed countries pile on the pressure to have free trade in manufactures (where they have an advantage, except in labour-intensive sectors like textiles) but insist on protecting their uncompetitive agriculture. In the stalled Doha negotiations the major subsidisers of agriculture want to maintain their domestic support (though they will shift from one type of subsidy to another in order to claim to be not so 'trade distorting'), but some

of them are pressurising developing countries to open up to farm imports, and opposing their attempt to defend their own food security and their small farmers' livelihoods.

There is also a clash of paradigms and principles between the TRIPS agreement and the Convention on Biological Diversity (CBD) over their treatment of intellectual property, biological resources and indigenous knowledge. The CBD's objectives include conserving biodiversity and protecting traditional knowledge and the rights of local communities: access and benefit sharing are key aspects. TRIPS is a commercial treaty that facilitates implementing a particular model of intellectual property which promotes private monopoly rights that are expected largely to benefit transnational companies.

While the CBD is based on the principle of national sovereignty over genetic resources, TRIPS confers the right to have 'national treatment' for foreigners and facilitates foreign ownership of patents in developing countries. There is a conflict between the stress of TRIPS on the private and exclusive rights of individual patent holders and recognizing the contribution and nature of community knowledge and the rights of those that have traditionally held it.

There are also differences between the two agreements in their treatment of innovators using modern technology and traditional knowledge. Even more significant, there is a clear contradiction between CBD's system of the right of states and local communities to prior informed consent and benefit-sharing, versus the right given to private companies and researchers under TRIPS to obtain patents unilaterally without undertaking prior informed consent and benefit-sharing arrangements.

This tension between TRIPS and CBD has been the subject of intense debate and negotiations within the two fora. It is imperative that the conflict is resolved, and on the basis of sustainable development principles.

The 'free market forces' paradigm has predominated for years, and still does. But there are some positive signs that indicate a strengthening of the sustainable development one. After reaching a peak at the 1992 Rio Summit, the environment lost priority among political leaders because of the pressures to be competitive in a liberalizing world. But awareness of its importance is now growing again, largely due to growing evidence of climate change and its devastating effects, and to the increasing net depletion of oil resources and the need to develop alternative, cleaner energy sources. It should soon return to near the top of the political agenda, rivaling globalization.

Though many developing countries still face persistent poverty and inequality, there has been a breakthrough — largely due to grassroots campaigning — in cancelling and relieving debt: twenty countries are initially involved and another twenty may become eligible. Interest in aid has revived in several developed countries, largely in the context of the Millennium Development Goals.

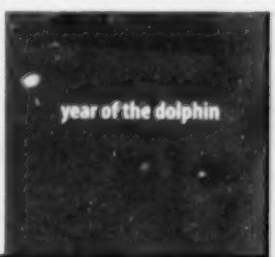
There is growing realization in many developing countries, that unfettered market forces and rapid liberalization are not working — and a search for alternative policies that favour sustainable development. Developing countries as a whole — through the Group of 77 and China — are demanding that their right to 'policy space' is respected by developed ones. And there is also a growing public awareness that the developed countries' agricultural subsidies harm the developing world. Pressure for reform is building up. Developed countries are still resisting, but the public clamour may eventually bring some results.

Citizen groupings representing alternative approaches and promoting social and environmental causes have been becoming more effective. Particularly positive has been increased networking and collaboration among Northern and Southern groups, cross-fertilizing interests in such issues as the environment, development, human rights, women's rights, and cultural and social problems. The emergence of civil society — advocating alternative viewpoints at international fora and to international institutions — can monitor and help shape the globalization process, bringing hope for the promotion of sustainable development. Most encouraging of all are the thousands of grass-roots movements and groups taking their own initiative to fight for their survival, livelihoods or the larger public cause. These are the real advocates of sustainable development, and they give rise to the best hope that the clash of paradigms will have a good outcome.

awards and events

The Billion Tree Campaign began officially on 1 January 2007. Inspired by Nobel Peace Prize laureate Wangari Maathai and under the additional patronage of Prince Albert II of Monaco, the campaign invites individuals, civil society organizations and governments to take action to reverse environmental degradation. UNEP is coordinating the Billion Tree Campaign to foster a spirit of environmental citizenship and to empower communities. Every citizen can become a campaigner and mobilize friends and family, organizations and governments to join in and enter tree planting pledges on a dedicated web site at www.unep.org/billiontreecampaign with the objective of planting and caring for at least one billion trees worldwide in the course of the year.

Dolphins are among the planet's most well-known, but also increasingly vulnerable, marine mammals. Threats for dolphins are on the rise. These include, marine pollution, disturbance by noise from shipping, entanglement in fishing nets, deliberate hunting, and prey depletion due to overfishing. To raise awareness and help stop the decline in dolphin numbers, UNEP and the Convention on Migratory Species and its partners decided to launch the **Year of the Dolphin 2007** with many activities planned throughout the year. http://www.yod2007.org/en/Start_page/index.html



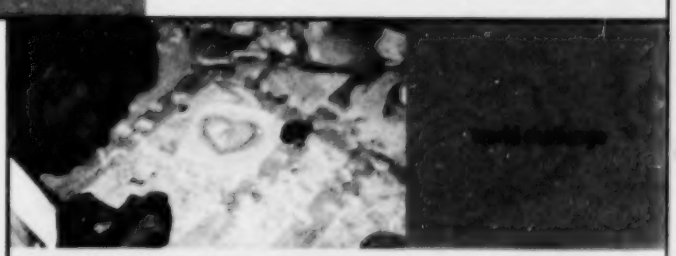
In the first quarter of 2007, the Republic of Congo will host an international forum on **indigenous peoples from African forests**, with an emphasis on forest dwellers collectively known as pygmies. This meeting will be held in the heart of the Equatorial forest, in the town of Impfondo, with representatives coming from all over Central Africa (Angola, Cameroon, Central African Republic, Congo, Democratic Republic of Congo, Gabon, and Sao Tome and Principe). According to the main organizer of this event, Mr. Henri Djombo, Minister of Forest Economy and Environment of Congo, also current President of the African Ministerial Conference on the Environment (AMCEN), indigenous peoples from the forests will be able to express themselves for the first time by talking to government representatives, researchers, anthropologists, and the international community.

Seven prominent and inspirational leaders from each region of the world have been declared as **UNEP Champions of the Earth 2007**:

- Cherif Rahmani, Algeria's Minister of Environment, for significantly advancing environmental law and economic instruments that conform to international norms;
- Elisa 'Bebet' Gillera Gozun of the Philippines, whose commitment to the environment has won her the trust of all sectors of society;
- Viveka Bohn of Sweden, for her global efforts to ensure chemical safety and prominent role in multilateral negotiations;
- Marina Silva, Brazil's Minister of Environment, for her efforts to protect the Amazon rainforest while taking into account the perspectives of people who use its resources in their daily lives;
- Al Gore, former Vice-President of the United States, for making environmental protection, and the issue of climate change in particular, a pillar of his public service;
- Prince Hassan Bin Talal of Jordan for his transboundary and holistic approach to environmental protection in the region and for establishing a number of national and international environmental institutions;
- The International Olympic Committee (IOC) and its President, Jacques Rogge, for reinforcing the importance of the environment in the work of the Olympic Movement. http://www.unep.org/champions/

right livelihood awards

This year's **Right Livelihood Honorary Award**, sometimes called the 'alternative Nobel prize' went to a critic of the wrong sort of globalization, Chico Whitaker Ferreira, for "a lifetime's dedicated work for social justice that has strengthened democracy in Brazil, and helped give birth to the World Social Forum, showing that 'another world is possible'". The 2007 World Social Forum was held in Nairobi, Kenya, also the home of UNEP. The 2006 Right Livelihood Award of $230,000 was shared between Ruth Manorama, India's "most effective organiser of, and advocate for, Dalit women, a caste known also as 'untouchables'"; Daniel Ellsburg of the USA "whose whistleblowing helped end the Vietnam War", and the Festival Internacional de Poesia de Medellin in Columbia, "a unique poetry festival, which has helped build peace in one of the most violent cities in the world."



The **World Challenge**, in association with Shell, has announced its 2006 winner. Maximus is a papermaking firm that makes high-quality products from a variety of wastes, including paper from offices and bark from banana trees. The firm set up shop in Kegalle, Sri Lanka, in 1997, not far from an elephant orphanage. In Sri Lanka there is competition between elephants and a growing human population for land. On discovering that elephant dung is an ideal raw material for paper products, they began a range of elephant-dung paper to draw attention to the plight of the Sri Lankan elephant. This unusual product has found buyers within Sri Lanka and throughout the world. A proportion of the sales are donated to the elephant orphanage. http://www.theworldchallenge.co.uk/entry.php

WWW

Globalization and the Environment: Useful Links

This page contains links to websites from governments, international organizations, non-governmental organizations, businesses, media, and other groups from around the world to help you research the complex phenomenon of globalization and the environment. We have compiled these links from our own review of the vast amount of information available on the internet to help you to find the most relevant sources for your research. Our Planet magazine does not, however, endorse the viewpoints of any of the groups to which we link, and we cannot guarantee the accuracy of the information posted on these sites. Rather, we hope to provide you with a broad range of opinions and perspectives.

www.unep.org

Experts - Leading environmental experts from around the world are now available to interact and share ideas with users of www.unep.org. UNEP has launched the new interactive feature 'Ask UNEP', giving members of the public online access to a UNEP expert for a day. The expert-a-day exercise aims to bring the environment into public consciousness and to create a healthy discourse on the major issues that affect the health of our planet and the sustainability of natural resources. The feature also lends a human face to the work of UNEP by allowing in-house experts to discuss the work undertaken by the organization. ...

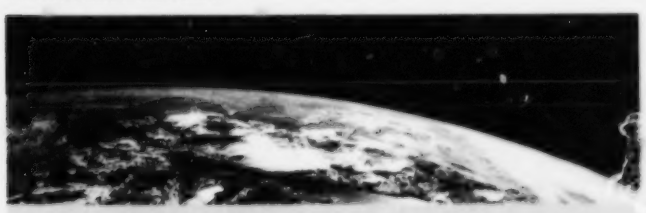
RSS - As of 2007, UNEP's new homepage at www.unep.org offers, among other features, an RSS feed. This will allow UNEP's users to receive, automatically and at no cost, the latest news articles published on UNEP's Newscentre website. RSS (Really Simple Syndication) feeds are streams of free content from editorial internet sites. They contain titles of articles and hypertext links pointing to the full article.

www.uwm.edu/Dept/CIE/Resources/globalization/globalenv.html
Developed by the Centre for International Education at the University of Wisconsin-Milwaukee, this online internet Guide on Understanding the face of Globalization offers a portal to a series of useful resources related to Globalization and the Environment. It represents an excellent first stop for all researchers.

www.unglobalcompact.com/Issues/Environment/index.html
The UN Global Compact seeks to promote responsible corporate citizenship so that business can be part of the solution to the challenges of globalization. In this way, the private sector – in partnership with other social actors – can help realize the Secretary-General's vision: a more sustainable and inclusive global economy.

www.wupperinst.org/globalisation
What kind of globalization is sustainable? Guided by this question, the Germany-based Wuppertal Institute for Climate, Environment and Energy aims to contribute to the public debate on causes, forms, and effects of economic globalization.

www.economics.bham.ac.uk/cole/globalisation/index.htm
A dedicated website for academic research into economic aspects of the globalization and the environment debate. Led by academics from the University of Birmingham, UK, and funded by the Leverhulme Trust and the Economic and Research Council (ESRC).



arabic language

www.arabreformforum.org/ar/index.html
Produced by the Library of Alexandria, this pro-globalization site covers environment, health and sustainable development in the context of 'reform' in the Arab region.

www.albankaldawli.org/
The World Bank's Arabic edition website highlights the economic and social benefits of globalization. "Managing the Next Wave of Globalization" is the main current feature, highlighting the global economic prospects for 2007. Climate change is among the topics highlighted.

arabic.fsrumtiersmonde.net/
An anti-globalization think tank led by Egyptian intellectual Hussein Amin, which brings together intellectuals from the Arab region and beyond. The objective of Third World Forum is to carry out research, identify alternatives to globalization and formulate policy recommendations.

www.kefaya.org/
Popular anti-globalization website of left-wing Egyptian movement KEFAYA, which has attracted people from all Egypt's social strata and whose influence stretches across North Africa and Arabian Gulf.

www.alhadil.net/
This site adopts a militant attitude towards globalization. The site offers op-eds on "environmental globalization" covering global warming, water security, and toxic waste.

wps.prenhall.com/esm_rowntree_dag_3
The Diversity Amid Globalization Companion website provides students with an online textbook to understand the "tension and interplay between globalization and diversity — and between the global, the regional, and the local".

www.worldgrowth.org
This website claims to provide balance to the debate on trade, globalization and sustainable development. Its orientation is meant to be "pro market and sound science".

www.wbcsd.ch/
The website of the World Business Council for Sustainable Development provides a business perspective on global environment protection.

www.aseed.net
Action for Solidarity, Equality, Environment and Development (A SEED) Europe believes that the fundamental causes of ecological destruction and underdevelopment stem from "patriarchy, colonialism, scientific reduction, imperialism, and the more recent imposition of a ruthless, free market globalization".

www.theglobalist.com/DBWeb/Community.aspx?FeatureId=7
The Globalist website provides information on global economy, politics and culture. The featured link offers specific references on globalization and the environment.

www.globalexchange.org/
Global Exchange is a membership-based international human rights organization dedicated to promoting social, economic and environmental justice around the world.

www.twnside.org.sg/env.htm
The Third World Network is an independent non-profit international network of organizations and individuals involved in issues relating to development, the Third World and North-South issues. Its objectives are to conduct research on economic, social and environmental issues pertaining to the South.

www.riddac.org
This website, managed by the Information Network for Sustainable Development in Central Africa, is a primary source of information about environment and conservation issues, mainly in Central Africa.

blogs

globalisation-and-the-environment.blogspot.com/
A place to find news, research, and discussion on economic issues related to the impact of globalization on the environment. This blog examines different economic aspects of the globalization and the environment debate.

www.thenewsblog.org/effects-of-globalization-on-the-environment/
"Many people blame globalization for hurting the environment. I blame globalization for giving me more choices when it comes to great ethnic foods, but certainly not for hurting the environment", says Nicholas Dubay.

www.globalenvision.org/library/1/776/
Global Envision takes the global free market system as a starting point for reducing world poverty, maintaining that providing the poor with opportunities to improve their own lives is the catalyst for creating a more fair, hopeful, and stable future. Articles on all aspects of the globalization debate, including the environment.

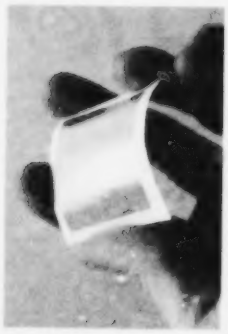
www.developmentblogs.org/issues/environment/page/3
Advertising itself as a "one-stop access to blogs covering global development issues", Development Blogs website provides access to 25 blogs and 4,972 posts (i.e., announcements, innovative ideas, commentaries, etc.) that cover 259 global development issues.

products

SoftBatteries™

Paper-based thin flexible SoftBatteries™ may one day eliminate the need for conventional batteries, which pollute the environment with cadmium, mercury and other harmful substances. Using a method based on traditional paper printing and lamination technology, the SoftBattery™ can be a power source for applications such as smart cards, music playing greeting cards, transdermal drug delivery patches, LEDs on paper, mobile sensors with RFID (radio frequency identification), and even electronic paper. In comparison to conventional button cells, SoftBatteries™ are extremely low in cost, environmentally friendly, landfill safe, as well as flexible in size and shape for easy integration into a variety of devices. Enfucell Ltd., the Finnish company that has developed this new technology, was named Technology Pioneer 2007 by the World Economic Forum.

www.enfucell.com/



Tesco

UK supermarket giant Tesco is running three-quarters of its distribution fleet on 'greener' biodiesel from the beginning of 2007. The retailer has 2,000 lorries responsible for transporting goods to 754 stores and 716 smaller Express outlets. It estimates that by using the B50 blend — 50 per cent ordinary diesel mixed with biofuel — it will cut its greenhouse gas emissions by more than 70,000 tonnes a year. Tesco Chief Executive Sir Terry Leahy described the move as an 'extraordinary change' for the supermarket giant. Tesco also recently opened a new supermarket in Scotland featuring wind turbines to power the checkouts and rainwater to wash the home delivery vans.

Solar charger

The perfect gadget in this mobile age: a solar power mobile phone charger for people who like living their life outdoors but don't want to compromise on communication. It allows you to harness the sun's energy and have the power to communicate, anywhere, anytime, anyplace. It has and on/off switch for saving battery power and when fully charged, the unit will charge an average cell phone in 2 hours, allowing for 20-30 minutes of talk time.

www.carbonneutral.com

EPEAT

The Electronic Product Environmental Assessment Tool (EPEAT) is a procurement tool to help large volume purchasers in the public and private sectors evaluate, compare, and select desktop computers, notebooks, and monitors based on their environmental attributes. More than 300 computers have been registered in this new 'green' computer standard funded by the Environmental Protection Agency in the United States, and nine manufacturers currently participate in the programme. Compared to traditional computer equipment, all EPEAT-registered computers have reduced levels of cadmium, lead, and mercury to better protect human health and the environment. They are more energy efficient, which reduces emissions of greenhouse gases, and are also easier to upgrade and recycle.

www.epeat.net

2008 Ford Escape

The redesigned 2008 **Ford Escape** and Escape Hybrid feature the first US automotive applications of 100 per cent recycled fabric seating surfaces. The fabric is constructed from a 100 per cent post-industrial waste – defined as anything intended for retail use, but which never makes it to the consumer. This can be anything from plastic intended for pop bottles to undyed polyester fibers that don't make the cut for consumer use. It also features innovative backcoating technology that minimizes the use of commonly used flame retardants in favour of a new, phosphorous-based flame retardant. The fabric is a result of a collaboration between teams at Ford and **InterfaceFABRIC**, a global leader in the manufacturing of environmentally responsible floor coverings and commercial fabrics. An estimated 80,000 vehicles will eventually feature the fabric. The use of post-industrial recycled materials will conserve annually 600,000 gallons of water, 1.8 million pounds of carbon dioxide equivalents, and the equivalent of more than 7 million kilowatt hours of electricity.

www.interfaceinc.com/pdfs/Ford_Motor_Company_Release_Fabrics_051006.pdf

Jhai PC

EcoSystems, Nepal, has designed a reliable human-powered pedal generator with storage device. This silent emission-free generator will deliver 50-70 watts anytime, anywhere, inexpensively and can be used to charge LEDs and fluorescent lights, battery chargers, and communication devices. It is low-maintenance and can also be used with products such as the pedal powered Jhai PC. The **Jhai PC** can be powered by any power source, but was designed to be used with pedal generators. The System is designed to meet the communication and connectivity needs of villagers in remote rural areas of Laos, but is spreading to other markets.

www.jhai.org/jhai_remote1.htm http://www.ecosystemsnepal.com/research_development.php

Plasma TV

Matsushita Electric Industrial Co. has become the first company in the world to achieve the elimination of lead in Plasma Display Panels (PDPs) in its **Panasonic** products. With the recent introduction of the world's largest Plasma HDTV, the 103-inch PDP TV, Panasonic has avoided the use of lead in all of its Plasma TV models for 2006.

http://panasonic.net

FeliCa

Japanese electronics giant **Sony** is promoting the use of vegetable plastic in its products and packaging. In a world-first development, Sony has succeeded in creating a contactless IC (integrated circuit) card made from vegetable-based plastic, derived from biomass. The new **FeliCa** contactless IC smart card is more than 51 per cent composed of vegetable-based materials and offers numerous advantages such as reduced consumption of exhaustible resources, fewer greenhouse gas emissions and a more stable chemical composition. IC cards contain computers called IC chips which can store large quantities of information. Because of this, IC cards have the advantage of allowing one card to be used to access multiple services.

www.sony.net/SonyInfo/News/Press/200611/06-112E/index.html

Millions of old computers are discarded in developing countries every year, along with mountains of other electronic waste. More is exported to them from developed countries. Most ends up being dumped in landfills, where it threatens to poison land and groundwater with lead and other heavy metals. It is one of the world's fastest growing, and most intractable, environmental problems.

But in South Africa, an unlikely businessman has begun to turn the toxic tide – Johnny Clegg, the rock star dubbed "white Zulu" both for his African music and for his remarkable history of ignoring racial barriers under the apartheid regime. He has started a company to recycle the waste, and to provide thousands of jobs. "This is the first business I've been in that's directly linked to the well-being of the planet", he says. "I think that's a good thing."

Born in Rochdale, in the North West of England, in 1953, he moved to Zimbabwe, his mother's country, at the age of two. One of his earliest memories is of, when he was about five years old, being shown an example of the country's wildlife by a young cattle herder. "He pointed his finger, and where he was pointing there was this herd of antelope – just standing there. I was completely amazed. It was like magic."

At seven his mother – a jazz singer – married a journalist from South Africa and they moved there. At 14 he started to learn to play the guitar, and took up with Charlie Mzila, a Zulu flat cleaner and street musician, who played an Africanised version of the instrument, learning the fundamentals of Zulu music and traditional dancing from him. The two went together to perform in migrant workers hostel and rooftop shebeens and Clegg was often arrested for flouting the racial laws of the time.

"When it came to a fence, which apartheid was, my approach was to say: 'Where are the holes in the fence, so that I can get through?'", he now recalls. "I got arrested, and I got into trouble, but everywhere I wanted to go, I went!"

Sipho Mchunu – a migrant worker and gardener, and another street musician – heard of his reputation and sought him out. The two teenagers started playing together, often enduring official harassment and racial abuse, and formed a group, called Juluka ("sweat" in Zulu) , in direct contravention of the regime's Cultural Segregation laws.

Their music – blending English lyrics, Western melodies and Zulu musical structures – was censored and banned, but they toured the country, building up a following and recording a succession of hits. And when, in 1985, Mchunu left to go back to the farm where he was born, Clegg formed another crossover band, Savuka – which mixed African music, Celtic folk music, and international rock sounds – rapidly achieving intercontinental success.

Clegg's latest departure began when he decided to replace his PC, and asked himself: "Where does your computer go to die". Learning that it would end up in landfill, he set up a waste recycling company, calling it "African Sky" after one of his hit songs.

He established his first plant near Johannesburg, where workers can strip down a computer into recyclable parts in just six minutes: only one per cent of the waste has to be thrown out. And he is now planning a $10 million state-of-the-art facility near Cape Town that will take in and recycle electronic waste from Europe and the United States, giving work to 17,000 people.

"Electronic components are full of toxins, and most electronic junk ends up choking landfills as these poisons seep into the ground", he says. "But now people will not need to throw their old computers into them."